

## DRAWINGS ATTACHED

- (21) Application No. 39112/69 (22) Filed 5 Aug. 1969  
 (23) Complete Specification filed 9 Sept. 1970  
 (45) Complete Specification published 13 Dec. 1972  
 (51) International Classification A47C 3/02  
 (52) Index at acceptance

A4U 6

A4J 224 225 255 288 300

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(54) IMPROVEMENTS IN OR RELATING TO A ROCKING  
 CHAIR

(71) We, VONO LIMITED, a British Company of Tipton, in the County of Stafford, do hereby declare the invention for which we pray that a Patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement:—

This invention relates to a rocking chair, that is a chair including a seat which is capable of rocking movement relative to a floor surface on which the rocking chair is disposed, said rocking movement usually being in a vertical plane coinciding with the front-to-back plane of symmetry of the seat, so that a person seated on the chair can rock forwards and backwards therewith.

It is an object of the invention to provide an improved rocking chair.

According to the invention, there is provided a rocking chair comprising a stand adapted to rest on a floor surface; a seat; and mounting means for the seat, said mounting means comprising an upright rigid elongate web, the centre of which is secured to the stand, an elongate bracket secured to the underside of the seat so as to extend at right angles to the front-to-back plane of symmetry of the seat and having a depending flange in side-by-side relationship with said web and an elongate resilient pad interposed between the flange and the web, the web, flange and pad being connected together whereby resilient relative movement can take place between the flange and the web, so as to enable rocking movement of the seat relative to the stand to take place.

A second elongate bracket may be secured to the underside of the seat so as to extend at right angles to the front-to-back plane of symmetry of the seat said second bracket having a depending flange in side-by-side relationship with said web, and a second elongate resilient pad may be interposed between said flange of the second bracket and the side of the web opposite from the first pad, the web, the second pad and the flange

of the second bracket being connected together.

The pad may be clamped between the web and the flange.

The resilient pad or pads may be made of a synthetic or natural rubber material or may be made of a resilient plastics material.

The seat may be rotatable about a generally vertical axis relative to the floor surface.

The stand may comprise a base adapted to rest on the floor surface and a spindle which can rotate relative to the base, the centre of the strip being secured to the spindle, so as to enable the seat to rotate relative to the base.

A rocking chair according to the invention will now be described, by way of example only, with reference to the accompanying drawings, wherein:—

FIGURE 1 is a front elevation, partly in section, of a stand for the chair,

FIGURE 2 is a perspective view of an embodiment of mounting means for a rocking chair according to the invention,

FIGURE 3 is a section through the mounting means shown in Figure 1 showing the appearance of the mounting means when the chair is being rocked.

The chair to be described comprises a stand shown in Figure 1 having a base 11 comprising five equally angularly spaced legs. The base 11 may comprise any suitable number of legs spaced at any convenient angles to provide a stable base and it should also be appreciated that the base may include a flat floor-engaging part or may be constructed in other suitable ways known to those skilled in the art. The base 11 rests on a floor surface.

The stand 10 also includes a tube 12 which is supported in a vertically upright position and within which are provided two tubular bushes 13, 14 which are made of nylon or any other suitable low friction material, one bush 13 being located at the

upper end, and the other bush 14 being located at the lower end of the tube 12.

A spindle 16 is rotatably supported within the tube 12 and is provided with a shoulder 15 which rests on an outwardly extending flange 17 of the upper brush 13. Thus, the upper end of the tube 12 supports the spindle 16, via the outwardly extending flange 17 of the upper bush. When the spindle 16 is in position within the tube 12, the spindle is vertically upright with its lower end extending below the lower end of the tube and, in order to prevent accidental removal of the spindle from the base by lifting, a circumferential groove 18 is provided in the lower end of the spindle 16, to receive a circlip 19 which prevents such accidental removal.

A cover tube 20 is provided to conceal the working parts of the revolving mechanism of the chair stand in an attractive and decorative way and also to prevent possible injury caused by persons catching their hands in the mechanism, for example while moving the chair.

The mounting means on which the seat of the rocking chair is supported is attached to the upper end of the spindle and hence to the stand.

Referring to Figures 2 and 3 of the drawings, these show an embodiment of rocking chair according to the invention.

A bar 27 of inverted 'T' shape in cross-section is secured to the upper end of the spindle 16 by welding the centre of the bar 27 to the upper end of the spindle. The bar lies in a generally horizontal position and includes an upright web 28 which forms the down stroke of the 'T' and which is rigid.

At each side of the upright web 28, there is provided a pad 29 of natural or synthetic rubber material. The pads 29 are secured in position adjacent the upright web 28 by means of a pair of brackets 30 which are of inverted 'L' shape and which are of the same length as the bar 27. The brackets 30 are disposed at each side of the rubber pads 29 and each bracket 30 includes a downwardly depending flange 31. The rubber pads 29 are trapped between the upright web 28 of the bar 27 and the downwardly depending flange 31 of the bracket 30, one of the pads being thus trapped at each side of the upright web 28. Alternatively, the pads may be secured by adhesive to the web 28 and/or flanges 31, or the assembly may be bonded or moulded together directly.

In addition to the downwardly depending flange 31, each bracket 30 includes a horizontally outwardly extending upper flange 32, 32a, disposed at right angles to the downwardly depending flange 31.

The mounting means comprising the bar 27, the rubber pads 29 and the brackets 30 is mounted at its centre on the spindle 16 of the stand of the rocking chair, and is

secured at or adjacent its ends to the underside of the seat of the chair. The upper flange 32a of one of the brackets 30 is secured, through a fixing member 34, to the underside of the seat by means of screws or rivets for example. The upper flange 32 of the other bracket is secured to the underside of the seat by means of a bolt passing through a slot 35 in the fixing member 34, which forms an adjustment means to allow for adjustment to the compression of the rubber when the chair is allowed to rock, as will be hereinafter described.

Since the bar 27 is rigid, and the brackets 30 are also rigid, the rocking action of the chair is due to relative movement between the bar 27 and the seat which is supported by the brackets 30, due to the resiliency of the rubber pads 29 interposed between the upright web 28 of the bar 27 and the depending flanges 31 of the brackets 30.

It should be appreciated that, although the seat can be rotated with respect to the stand referred to above, the bar 27 rotates in unison with the seat and therefore the rocking action due to the mounting of the seat on the resilient mounting means always takes place in a direction substantially coinciding with the front-to-back plane of symmetry of the seat, irrespective of whether the seat is rotated or not.

The rubber pads 29 are securely clamped at each side of the upright web 28 and between the depending flanges 31 of the brackets, by means of a pair of bolts 33 which pass through the assembled mounting means as shown in Figures 2 and 3 of the drawings. When the seat is displaced in a direction which coincides with the general front-to-back plane of symmetry of the seat, the rubber resilient pads 29 of the mounting means become distorted, as shown in Figure 3 of the drawings. The rubber pad 29 at one side of the rigid upright flange 28 is compressed, whilst the other pad 29 is subjected to reduced pressure. The reaction of the rubber material to this compression at one side of the upright web 28 causes the chair to rock in the reverse direction, thus compressing the pad 29 which was previously under reduced pressure and reducing the pressure on the pad which was previously compressed. The upper flange 32a of the bracket 30 which is disposed at one side of the upright web 28 is secured to the underside of the seat, through the fixing member 34, whilst the other upper flange 32 is adjustably secured to the seat, by means of a bolt passing through the slot 35 in the fixing member, to allow for adjustment of the brackets 30 due to the alternate compression and release of pressure on the rubber pads 29 during the rocking action of the chair.

Since the initial compression of the rubber

pads 29 in a neutral position of the seat is determined by the pressure applied to the brackets 30 by the bolts 33, these bolts 33 can be used to adjust the amount of deflection of the seat during rocking, by applying greater or less clamping pressure to the rubber pads, and to enable such adjustment to be made the bolts which pass through the slots 35 are slackened off and are then re-tightened after adjustment.

The invention thus provides a simple form of rocking action for a rocking chair, which relies on the resilience of the material used in the mounting of the seat on the stand.

Although the drawings show the use of structural steel sections for the mounting means, pressings could alternatively be used, in particular to replace the parts 28, 30 and 34.

#### WHAT WE CLAIM IS:—

1. A rocking chair comprising a stand adapted to rest on a floor surface; a seat; and mounting means for the seat, said mounting means comprising an upright rigid elongate web, the centre of which is secured to the stand, an elongate bracket secured to the underside of the seat so as to extend at right angles to the front-to-back plane of symmetry of the seat and having a depending flange in side-by-side relationship with said web and an elongate resilient pad interposed between the flange and the web, the web, flange and pad being connected together whereby resilient relative movement can take place between the flange and the web, so as to enable rocking movement of the seat relative to the stand to take place.

2. A rocking chair according to Claim 1 wherein the pad is clamped between the web and the flange.

3. A rocking chair according to Claim 1 wherein the pad is secured to the web and/or flange by adhesive.

4. A rocking chair according to Claim 1

wherein the pad is moulded directly to the web and/or flange.

5. A rocking chair according to any preceding claim wherein a second elongate bracket is secured to the underside of the seat so as to extend at right angles to the front-to-back plane of symmetry of the seat said second bracket having a depending flange in side-by-side relationship with said web, and a second elongate resilient pad is interposed between said flange of the second bracket and the side of the web opposite from the first pad, the web, the second pad and the flange of the second bracket being connected together.

6. A rocking chair according to any preceding claim wherein the pad or pads is or are made of synthetic or natural rubber material.

7. A rocking chair according to any one of claims 1 to 5 wherein the resilient pad or pads is or are made of a resilient plastics material.

8. A rocking chair according to any preceding claim, wherein the seat is rotatable about a generally vertical axis relative to the floor surface.

9. A rocking chair according to Claim 8, wherein the stand comprises a base adapted to rest on the floor surface and a spindle which can rotate relative to the base, the centre of the web being secured to the spindle so as to enable the seat to rotate relative to the base.

10. A rocking chair substantially as hereinbefore described with reference to and as illustrated in Figure 1 and 2 of the accompanying drawings.

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Printed for Her Majesty's Stationery Office, by the Courier Press, Leamington Spa, 1972.  
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from  
which copies may be obtained.

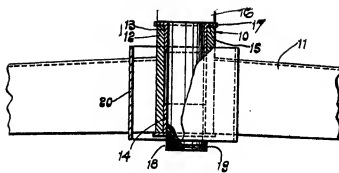


Fig. 1

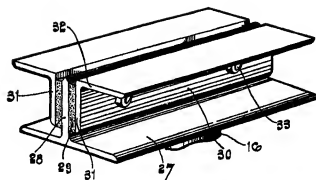
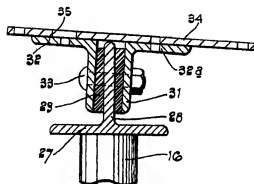


Fig. 2



**Fig. 3**